

ed May 28 14:43:26 2003

GenCore version 5.1.4.P5.4578  
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OM protein - protein search, using sw model

Run on: May 19, 2003, 16:32:11 ; Search time 13 Seconds

(without alignments)  
749,764 Million cell updates/sec

Title: US-09-847-102A-68

Sequence: 1 MARPPSPAPSLILLIAQL.....PNCAPCYPSFSADERTFA 235

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database: SwissProt\_40.\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1310	100.0	585	FZD5_HUMAN	013467 homo sapien
2	1143	87.3	577	FZD5_MOUSE	096d0 mus musculu
3	825.5	63.0	559	FZD5_XENLA	P58421 xenopus lae
4	824	62.9	694	FZD8_HUMAN	09h461 homo sapien
5	823.5	62.9	685	FZD8_MOUSE	061091 mus musculu
6	802	61.2	581	FZD8_XENLA	093274 xenopus lae
7	621	47.4	694	FRZ2_DROME	09vxx3 drosophila
8	477	36.4	565	FZD2_HUMAN	014332 homo sapien
9	476	36.3	570	FZD2_MOUSE	09j1p6 mus musculu
10	466	35.6	570	FZD2_RAT	008464 rattus norv
11	457	34.9	574	FZD7_HUMAN	061090 mus musculu
12	440.5	33.6	572	FZD7_MOUSE	09u106 mus musculu
13	438.5	33.5	551	FZD2_XENLA	057328 gallus gall
14	431	32.9	642	FZD1_CHICK	070421 mus musculu
15	422	32.2	592	FZD1_MOUSE	09u126 mus musculu
16	421	32.1	523	FZD2_CHICK	091a06 gallus gall
17	414.5	31.6	567	FZD1_HUMAN	09u126 mus musculu
18	411	31.4	648	FZD7_HUMAN	09u126 mus musculu
19	405.5	31.0	549	FZD7_CHICK	09u126 mus musculu
20	401	30.6	559	FZD1_XENLA	09u126 mus musculu
21	398	30.4	641	FZD1_MOUSE	09u126 mus musculu
22	394.5	30.1	591	FZD9_HUMAN	09u126 mus musculu
23	394.5	30.1	592	FZD9_MOUSE	09u126 mus musculu
24	384	29.3	581	FZD1_HUMAN	09u126 mus musculu
25	372	28.4	325	FRZB_HUMAN	09u126 mus musculu
26	371	28.3	583	FRIZ_DROVI	09u126 mus musculu
27	370.5	28.3	581	FRIZ_DROME	09u126 mus musculu
28	368	28.1	586	FZD4_XENLA	09u126 mus musculu
29	367	28.0	323	FRZB_MOUSE	09u126 mus musculu
30	366	27.9	325	FRZB_BOVIN	09u126 mus musculu
31	360	27.5	580	FZD8_XENLA	09u126 mus musculu
32	351	26.8	585	FZD1_CHICK	09u126 mus musculu
33	309	23.6	523	FZD4_XENLA	09u126 mus musculu

ALIGNMENTS

34	308	23.5	537	1	FZD4_HUMAN	09u1v1 homo sapien
35	304.5	23.2	666	1	FZD3_MOUSE	061086 mus musculu
36	302.5	23.1	595	1	FZD4_CHICK	091a05 gallus gall
37	300.5	22.9	538	1	FZD4_RAT	09u108 rattus norv
38	299.5	22.9	537	1	FZD3_MOUSE	09u108 mus musculu
39	297	22.7	666	1	FZD3_HUMAN	09u108 mus musculu
40	293.5	22.4	664	1	FZD3_XENLA	09u108 mus musculu
41	284	21.7	705	1	FRZ4_DROME	042379 xenopus lae
42	282	21.5	706	1	FZD6_HUMAN	09u1w1 drosophila
43	271	20.7	709	1	FZD6_MOUSE	060353 homo sapien
44	261	19.9	581	1	FRZ3_DROME	061088 mus musculu
45	218.5	16.7	1113	1	CORI_MOUSE	077438 drosophila
						092319 mus musculu

RESULT 1  
FZD5\_HUMAN  
ID FZD5\_HUMAN STANDARD; PRT; 585 AA.  
AC 013467;  
DT 15-JUN-2002 (Rel. 41, Created)  
DT 15-JUN-2002 (Rel. 41, Last sequence update)  
DE 15-JUN-2002 (Rel. 41, Last annotation update)  
DE Frizzled-5 precursor (Frizzled-5) (Fz-5) (hFz5) (FZ5).  
GN FZD5 OR HFZ5.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
[1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Retina;  
RX MEDLINE=96224032; PubMed=8626800;  
RA Wang Y., Macke J.P., Abella B.S., Andreasen K., Worley P.,  
RA Gilbert D.J., Copeland N.G., Jenkins N.A., Nathans J.,  
RT "A large family of putative transmembrane receptors homologous to the  
RT product of the Drosophila tissue polarity gene frizzled,"  
RT J. Biol. Chem. 271:4468-4476(1996).  
RN [2]  
RN SEQUENCE FROM N.A.  
RP MEDLINE=21301556; PubMed=11408929;  
RX Saitoh T., Hirai M., Katoh M.,  
RA "Molecular cloning and characterization of human Frizzled-5 gene on  
RT chromosome 2q33.3-q34 region,"  
RT Int. J. Oncol. 19:105-110(2001).  
RN [3]  
RN SEQUENCE OF 273-331 FROM N.A.  
RP TISSUE=Esophageal carcinoma;  
RX MEDLINE=96374323; PubMed=9707618;  
RA Tanaka S., Akiyoshi T., Mori M., Wands J.R., Sugimachi K.,  
RT "A novel frizzled gene identified in human esophageal carcinoma  
RT mediates APC/beta-catenin signals,"  
RL Proc. Natl. Acad. Sci. U.S.A. 95:10164-10169(1998).  
RN [4]  
RN COUPLING TO BETA-CATENIN PATHWAY.  
RP MEDLINE=97207341; PubMed=9054360;  
RX He X., Saint-Jeannet J.P., Wang Y., Nathans J., Varmus H.,  
RT "A member of the Frizzled protein family mediating axis induction by  
RT Wnt-5A,"  
RL Science 275:1652-1654(1997).  
CC -1- FUNCTION: Receptor for Wnt proteins. Most of frizzled receptors  
CC are coupled to the beta-catenin canonical signaling pathway, which  
CC leads to the activation of dishevelled proteins. Inhibition of  
CC GSK-3 kinase, nuclear accumulation of beta-catenin and activation  
CC of Wnt target genes. A second signaling pathway involving PKC and  
CC calcium fluxes has been seen for some family members, but it is  
CC not yet clear if it represents a distinct pathway or if it can be  
CC integrated in the canonical pathway, as PKC seems to be required  
CC for Wnt-mediated inactivation of GSK-3 kinase. Both pathways seem  
CC to involve interactions with G-proteins. May be involved in  
CC transduction and intercellular transmission of polarity  
CC information during tissue morphogenesis and/or in differentiated

CC  
DR EMBL; U43318; AAC50385.1; -.  
DR EMBL; AB043702; BAB60959.1; -.  
DR Genew; HGNC:4043; FZD5.  
DR MIM; 601723; -.  
DR InterPro; IPR000539; Fz1z2led.  
DR InterPro; IPR000024; Fz domain.  
DR InterPro; IPR000832; GPCR\_secretin.  
DR Pfam; PF01392; Fz; 1.  
DR Pfam; PF01534; Fz1z2led; 1.  
DR PRINTS; PRO0489; FRIZLED.  
DR SMART; SM00063; FRI; 1.  
DR PROSITE; PSS0038; Fz; 1.  
DR PROSITE; PSS0261; G-PROTEIN RECP F2\_4; 1.  
KW Multigene family; G-protein coupled receptor; Transmembrane;  
KW Developmental protein; Glycoprotein; Signal.

FT	SIGNAL	1	26	POTENTIAL.
FT	CHAIN	27	585	FRIZZLED 5.
FT	DOMAIN	27	238	EXTRACELLULAR (POTENTIAL).
FT	TRANSMEM	239	259	1 (POTENTIAL).
FT	DOMAIN	260	270	CYTOPLASMIC (POTENTIAL).
FT	TRANSMEM	271	291	2 (POTENTIAL).
FT	DOMAIN	292	315	EXTRACELLULAR (POTENTIAL).
FT	TRANSMEM	316	336	3 (POTENTIAL).
FT	DOMAIN	337	358	CYTOPLASMIC (POTENTIAL).
FT	TRANSMEM	359	379	4 (POTENTIAL).
FT	DOMAIN	380	402	EXTRACELLULAR (POTENTIAL).
FT	TRANSMEM	403	423	5 (POTENTIAL).
FT	DOMAIN	424	449	CYTOPLASMIC (POTENTIAL).
FT	TRANSMEM	450	470	6 (POTENTIAL).
FT	DOMAIN	471	500	EXTRACELLULAR (POTENTIAL).
FT	TRANSMEM	501	521	7 (POTENTIAL).
FT	DOMAIN	522	585	CYTOPLASMIC (POTENTIAL).
FT	DOMAIN	28	150	PE.
FT	SITE	525	530	LYS-THR-X-X-TRP MOTIF.
FT	SITE	583	585	PZ-BINDING.
FT	CARBOHYD	47	47	N-LINKED (GLCNAC. .) (POTENTIAL).
FT	CARBOHYD	151	151	N-LINKED (GLCNAC. .) (POTENTIAL).
FT	CONFLICT	88	88	T -> S (IN REF. 2).
FT	CONFLICT	262	263	DT -> ER (IN REF. 2).
FT	CONFLICT	345	345	A -> G (IN REF. 2).
FT	CONFLICT	357	357	G -> A (IN REF. 2).
FT	CONFLICT	402	402	R -> G (IN REF. 2).
SQ	SEQUENCE	585 AA:	64551 NW:	CF66CSBA746E7971 CRC64;

Query Match	100.0%	Score 1310	DB 1	Length 585
Best Local Similarity	100.0%	Pred. No. 1.8e-95		
Matches 235	Conservative 0	Mismatches 0	Indels 0	Gaps 0

0Y 1 MARPDSAPPSLLLLLLAOLVGRAAAASKAPOCOEITVPMCRGGINLTMPPQFNHDQ 60  
1 MARPDSAPPSLLLLLLAOLVGRAAAASKAPOCOEITVPMCRGGINLTMPPQFNHDQ 60  
0Y 61 DEAGLEVHGFVFLVEIQCSFDLRFPLCTMTTPICLPDIYKPLPPCRSVCERAYAGCSPLM 120

	RESULT 2		
	FZD5_MOUSE		
ID	FZD5_MOUSE	STANDARD;	PRT; 577 AA.
AC	Q9EQD0: 008975;		
DT	15-JUN-2002 (Rel. 41, Created)		
DT	15-JUN-2002 (Rel. 41, Last sequence update)		
DT	15-JUN-2002 (Rel. 41, Last annotation update)		
DE	Frizzled 5 Precursor (Frizzled-5) (Fz-5) (MFZ5).		
NN	FZD5.		

OS *Mus musculus* (Mouse).  
 OC *Eukaryota*; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 CC *Mammalia*; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 CX NCBI\_TaxID=10090;  
 [1]  
 RN  
 RP  
 RC  
 RC STRAIN=C57BL/6N; TISSUE=Gut;  
 RX PubMed=11092808;  
 RA Ishikawa T., Tamai Y., Zorn A.M., Yoshida H., Seldin M.F.,  
 RA Nishikawa S.-I., Takeo M.M.;  
 RA "Mouse Mx receptor gene Fzd5 is essential for yolk sac and placental  
 RT angiogenesis.";  
 RL Development 128:25-33(2001).  
 RN [2]  
 RP  
 RC  
 RC STRAIN=C57BL/6; TISSUE=Prostate;  
 RA Johnson M.A., Greenberg N.M.;  
 RL Submitted (Aug-1997) to the EMBL/GenBank/DBJ databases.

RP [3] TISSUE SPECIFICITY.  
 RA MEDLINE=96224032; Pubmed=6626800;  
 RA Wang Y., Macke J.P., Abella B.S., Andreasen K., Wolley P.,  
 RA Gilbert D.J., Copeland N.G., Jenkins N.A., Nathans J.,  
 RT "A large family of putative transmembrane receptors homologous to the  
 RL product of the *Drosophila* tissue polarity gene *frizzled*.";  
 RL J. Biol. Chem. 271:4468-4476(1996).  
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 CC are coupled to the beta-catenin canonical signaling pathway, which  
 CC leads to the activation of dishevelled proteins, inhibition of  
 CC GSK-3 kinase, nuclear accumulation of beta-catenin and activation  
 CC of Wnt target genes. A second signaling pathway involving PKC and  
 CC calcium fluxes has been seen for some family members, but it is  
 CC not yet clear if it represents a distinct pathway or if it can be  
 CC integrated in the canonical pathway, as PKC seems to be required  
 CC for Wnt-mediated inactivation of GSK-3 kinase. Both pathways seem  
 CC to involve interactions with G-proteins. May be involved in  
 CC transduction and intercellular transmission of polarity  
 CC information during tissue morphogenesis and/or in differentiated  
 CC tissues. Plays a role in yolk sac angiogenesis and in placental  
 CC vascularization. Binds to Wnt2, Wnt10B, Wnt5a, but not to Wnt3B  
 CC Wnt4.  
 CC -1- SUBCELLULAR LOCATION: Integral membrane protein.  
 CC -1- TISSUE SPECIFICITY: Expressed in eye, kidney, lung, chondrocytes  
 CC epithelial cells of the small intestine and goblet cells of the  
 CC colon.  
 CC -1- DEVELOPMENTAL STAGE: Expressed in the yolk sac, placenta, eye and  
 CC lung bud at 9.5 days post coitum (dpc). At 10.5 dpc, also  
 CC expressed in the placental blood vessel of embryonic origin.  
 CC -1- DOMAIN: The fz domain is involved in binding with Wnt ligands (B)  
 CC (similarity).  
 CC -1- SIMILARITY: BELONGS TO FAMILY FZ/SMO OF G-PROTEIN COUPLED  
 CC RECEPTORS.  
 CC -1- SIMILARITY: CONTAINS 1 FRIZZLED (FZ) DOMAIN.